

IN THE CLAIMS:

1. (Currently Amended) A process for producing a contact structure for connecting two substrates comprising the following process steps:

applying solder material to terminal areas of a first substrate to form electrically active conductive spacing metallizations with the solder material in direct contact with the terminal areas; and

bonding the first substrate with a second substrate, the bonding between the terminal areas of the first substrate and a contact surface area of the second substrate being performed by means of a partial fusion of the spacing metallizations during the bonding action leaving an essential part of said spacing metallizations in its solidified state for providing a spacing between the terminal areas and the contact surface area.

2. (Original) The process according to claim 1, wherein the spacing metallizations are partially fused by means of application of laser energy to the spacing metallizations.

3. (Previously Presented) The process according to claim 1, wherein the terminal areas of the first substrate are formed with an intermediate metallization prior to applying solder material thereto and said contact surface area of the second substrate is at least one of electrically active and electrically inactive.

4. (Previously Presented) The process according to claim 1, wherein the spacing

metallizations are given a spherical shape prior to bonding with the solder material being of a substantially uniform solder material content.

5 5. (Previously Presented) The process according to claim 1, wherein said bonding of said first substrate to said second substrate includes applying a conductive [[an]] adhesive compound is applied to the spacing metallizations, each spacing metallization being connected to said first substrate via said partial fusing, each spacing metallization being connected to said second substrate via said conductive adhesive.

5 6. (Currently Amended) The process according to claim 1, wherein said step of bonding of said first substrate to said second substrate includes applying a conductive [[an]] adhesive compound is ~~applied~~ to contact areas of the second substrate, said spacing metallizations being in contact with said conductive adhesive, each spacing metallization being connected to said first substrate via said partial fusing, each spacing metallization being connected to said second substrate via said conductive adhesive ~~provided for bonding to the~~ spacing metallizations.

7. (Currently Amended) The process according to claim 5, wherein the adhesive compound is applied by means of an application device which ~~can be~~ is moved relative to the spacing metallizations.

8. (Original) The process according to claim 5, wherein the adhesive compound is applied by immersing the spacing metallizations in a volume of the conductive adhesive compound.

9. (Currently Amended) The process according to claim 1, wherein, to produce the contact structure, the first substrate with its spacing metallizations is positioned against the contact surface of the second substrate with interposition of ~~the conductive adhesive mass~~ a conductive adhesive.

10. (Previously Presented) The process according to claim 1, wherein a gap remaining between the substrate surfaces after bonding the two substrates is filled with a filler material.

11. (Original) The process according to claim 10, wherein the filler material serves to secure the mechanical joint between the first substrate and second substrate.

12. (Currently Amended) A process for producing a contact structure for connecting two substrates comprising the following process steps:

applying solder material to terminal areas of a first substrate to form electrically conductive ~~and active~~ spacing metallizations consisting of a single alloy with the solder material in contact with the terminal areas; and

melting a portion of said spacing metallizations in a region of terminal areas of said

second first substrate to effect a fusion of said melted portion of said spacing metallizations with contact areas of said second first substrate such that said spacing metallizations are connected to said first substrate, said melting of a portion of said spacing metallizations occurring during fusion of said spacing metallizations with said contact areas leaving an essential part of said spacing metallizations in a solid state for spacing;

bonding said first substrate to a second substrate via a conductive adhesive after said portion of said spacing metallizations has been melted to attach said spacing metallizations to said first substrate such that said spacing metallizations maintain said first substrate at a spaced location from said second substrate, said spacing metallizations being in contact with said conductive adhesive.

13. (Previously Presented) The process according to claim 12, wherein said melting of a portion of said spacing metallizations is performed by application of laser energy to the spacing metallizations.

14. (Previously Presented) The process according to claim 12, wherein the terminal areas of the first substrate are formed with an intermediate metallization prior to applying solder material to said terminal areas.

15. (Previously Presented) The process according to claim 12, wherein the spacing metallizations are given a substantially spherical shape.

16. (Previously Presented) The process according to claim 12, wherein a gap remaining between the substrate surfaces after bonding the two substrates is filled with a filler material.

17. (Currently Amended) A process for producing a contact structure for connecting two substrates comprising the following process steps:

applying solder material directly to terminal areas of a first substrate to form electrically conductive ~~and active~~ spacing metallizations; and

5 maintaining a majority portion of said spacing metallizations in a solid state providing a spacing between said first and second substrates while melting a portion of said spacing metallizations in a region of contact areas of said ~~second~~ first substrate, said melting of said spacing metallizations and maintaining said spacing metallizations in a solid state occurring while moving the melted portion of said spacing metallizations into contact with said contact
10 areas to effect a fusion of said melted portion of said spacing metallizations with said contact areas of said ~~second~~ first substrate leaving an essential part of said spacing metallizations in a solid state, whereby one end of each metal spacing metallization is connected to said first substrate; to provide a spacing between said first substrate and said second substrate

applying a conductive adhesive to said spacing metallizations or to a second substrate;

15 bonding said first substrate to a second substrate via said conductive adhesive after said portion of said spacing metallizations has been melted such that said spacing metallizations maintain said first substrate at a spaced location from said second substrate, wherein said conductive adhesive and said spacing metallizations mechanically and electrically connect said

first substrate to said second substrate, another end of each spacing metallization being connected to said second substrate via said conductive adhesive.

18. (Currently Amended) The process according to claim 17, wherein said solder material has a substantially homogenous or uniform solder material content, said melting of a portion of said spacing metallizations is performed by application of laser energy to the spacing metallizations.

19. (Previously Presented) The process according to claim 17, wherein the terminal areas of the first substrate are provided with an intermediate metallization as a terminal area contact surface prior to applying solder material thereto.

20. (Previously Presented) The process according to claim 17, wherein the spacing metallizations are given a substantially spherical shape consisting of a single uniform alloy content.